



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,778	01/02/2002	Kenneth Odell McElrath	97B029/5	3682

7590 12/05/2003

ExxonMobil Chemical Company  
P.O. Box 2149  
Baytown, TX 77522-2149

EXAMINER

FISCHER, JUSTIN R

ART UNIT	PAPER NUMBER
----------	--------------

1733

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/040,778

Applicant(s)

MCEL RATH ET AL.

Examiner

Justin R Fischer

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 16-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 16-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Costemalle (US 5,376,438) and further in view of Gursky (US 5,532,312). Costemalle is directed to a pneumatic tire construction having a multi-layer tire sidewall, wherein said sidewall is formed of (i) an inner layer and (ii) an outer layer prepared from a blend of a rubber and a copolymer of an isoolefin, para-alkylstyrene, and bromo-alkylstyrene (Column 3, Lines 39-64). In describing the formulation of the outer layer of the tire sidewall, Costemalle suggests that the weight percent of para-alkylstyrene is between 1 and 20 and that the weight percent of the halogen (majority is in the form of bromo-alkylstyrene when bromine is selected) is between 0 and 7.5 (Column 6, Lines 1-20). While Costemalle fails to expressly describe the claimed quantitative relationship between the amount of para-alkylstyrene and bromo-alkylstyrene, one of ordinary skill in the art at the time of the invention would have found it obvious to form the outer sidewall layer with a formulation satisfying the claimed quantitative relationship in view of the ranges disclosed by Costemalle. It is clearly evident that the ranges of Costemalle describe a plurality of embodiments that satisfy the quantitative relationship of the claimed invention. Gursky is further applied to evidence that the general suggestion of

Art Unit: 1733

the claimed quantitative relationship is recognized in the tire industry, in particular that the halogen content can be inversely proportionally to the para-alkylstyrene content as opposed to being directly proportional as suggested by the Admitted Prior Art (Page 2, Lines 18+), such that one of ordinary skill in the art at the time of the invention would have found it obvious to select a rubber formulation satisfying the claimed quantitative relationship (Column 14, Lines 5-16). Lastly, applicant has not provided a conclusive showing of unexpected results to establish a criticality for a rubber formulation satisfying the claimed quantitative relationship.

It is emphasized that Gursky describes a pair of rubber formulations in which the alkylstyrene content is increased while the brominated alkylstyrene content is decreased. This represents an inverse relationship between the respective components of the rubber formulation as required by the claimed quantitative relationship. It is further noted that Gursky describes additional experiments in which the amount of bromine is constant while the amount of alkylstyrene is increased (Table V and VI)- in these tests, the rubber formulation with the larger alkylstyrene content exhibits better characteristics (e.g. ozone resistance, hysteresis). This further suggests that it is known within the tire industry that it is not required to use a proportional relationship between the bromine content (in the alkylstyrene) and the alkylstyrene content when forming a copolymer of isomonoolefin and para-alkylstyrene.

Regarding claims 17 and 22, the rubber being added to the halogenated copolymer is an unsaturated rubber selected from natural rubber, styrene-butadiene rubber, polyisoprene, and polybutadiene rubber (Column 3, Lines 40-50).

Art Unit: 1733

With respect to claim 18, Costemalle describes a preferred rubber content of between 30 and 70 phr of the blend, which incorporates the entire range of the claimed invention (Column 3, Lines 45-50).

Regarding claim 19, as set forth above, the blend (rubber and halogenated copolymer) is used in the manufacture of an outer tire sidewall layer.

With respect to claims 20 and 21, Costemalle suggests the inclusion of EPDM rubber in an amount between 1 and 40 phr, preferably 5-20 phr (Column 3, Lines 55-65).

Regarding claim 23, Costemalle specifically describes an embodiment in which the ratio is 0.28:1 between the halogenated copolymer and the rubber component (Column 3, Line 65+). It is further noted that one of ordinary skill in the art at the time of the invention would have readily appreciated additional embodiments in which the claimed ratio is present and the sidewalls are non-white.

With respect to claims 24 and 25, the inner sidewall layer of Costemalle is formed of one or more unsaturated rubbers selected from the group comprising natural rubber, SBR rubber, and polybutadiene rubber (Column 4, Lines 9-17).

Regarding claims 26 and 27, Costemalle suggests that the preferred isomonoolefin is isobutylene (Column 6, Lines 25-35) and that the preferred alkylstyrene is bromo-methylstyrene (Column 6, Lines 15-20 and 25-30).

With respect to claim 28 and 29, the inner and/or outer sidewall layer of Costemalle contains fillers, including carbon black, clays, and silicas (Column 10, Lines 59-65).

Art Unit: 1733

Regarding claim 30, Costemalle describes a preferred composition in which the copolymer is present in amount between 35 and 75 phr (Column 3, Lines 50-60).

**Conclusion**

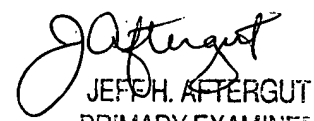
3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nakamura (JP 06240050) discloses a sidewall rubber composition including a halogenated copolymer of isoolefin and para-methylstyrene, wherein said composition has improved ozone resistance and flex fatigue.
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397** (if after December 18, 2003, (571) 272-1215). The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (703) 308-3853. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Justin Fischer

December 1, 2003

  
JEFF H. AFTERGUT  
PRIMARY EXAMINER  
GROUP 1300